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C. Frank Bennett

Kenneth W. Dobie

ISIS Pharmaceuticals Inc.

<120> ANTISENSE MODULATION OF EXTRACELLULAR-SIGNAL-REGULATED KINASE-6
EXPRESSION

<130> PTS-0055WO

<150> 10/348,431

<151> 2003-01-17

<150> 10/174,465

<151> 2002-06-17

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cgc	gcc	gtg	tac	cgg	gac	ctg	cag	ccc	gtg	ggc	tcg	ggc	gcc	tac	ggc	150
Arg	Ala	Val	Tyr	Arg	Asp	Leu	Gln	Pro	Val	Gly	Ser	Gly	Ala	Tyr	Gly	
	25					30					35					
gcg	gtg	tgc	tcg	gcc	gtg	gac	ggc	cgc	acc	ggc	gct	aag	gtt	gcc	atc	198
Ala	Val	Cys	Ser	Ala	Val	Asp	Gly	Arg	Thr	Gly	Ala	Lys	Val	Ala	Ile	
	40					45				50				55		
aag	aag	ctg	tat	cgg	ccc	ttc	cag	tcc	gag	ctg	ttc	gcc	aag	ctc	gcc	246
Lys	Lys	Leu	Tyr	Arg	Pro	Phe	Gln	Ser	Glu	Leu	Phe	Ala	Lys	Leu	Ala	
				60					65					70		
tac	cgc	gag	ctg	cgc	ctg	ctc	aag	cac	atg	cgc	cac	gag	aac	gtg	atc	294
Tyr	Arg	Glu	Leu	Arg	Leu	Leu	Lys	His	Met	Arg	His	Glu	Asn	Val	Ile	
				75				80						85		
ggg	ctg	ctg	gac	gta	ttc	act	cct	gat	gag	acc	ctg	gat	gac	ttc	acg	342
Gly	Leu	Leu	Asp	Val	Phe	Thr	Pro	Asp	Glu	Thr	Leu	Asp	Asp	Phe	Thr	
		90					95					100				
gac	ttt	tac	ctg	gtg	atg	ccg	ttc	atg	ggc	acc	gac	ctg	ggc	aag	ctc	390
Asp	Phe	Tyr	Leu	Val	Met	Pro	Phe	Met	Gly	Thr	Asp	Leu	Gly	Lys	Leu	
	105						110					115				
atg	aaa	cat	gag	aag	cta	ggc	gag	gac	cgg	atc	cag	ttc	ctc	gtg	tac	438
Met	Lys	His	Glu	Lys	Leu	Gly	Glu	Asp	Arg	Ile	Gln	Phe	Leu	Val	Tyr	
	120					125				130				135		
cag	atg	atg	aag	ggg	ctg	agg	tat	atc	cac	gct	gcc	ggc	atc	atc	cac	486
Gln	Met	Met	Lys	Gly	Leu	Arg	Tyr	Ile	His	Ala	Ala	Gly	Ile	Ile	His	
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Arg	Asp	Leu	Lys	Pro	Gly	Asn	Leu	Ala	Val	Asn	Glu	Asp	Cys	Glu	Leu	
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 Gly Tyr Val Val Thr Arg Trp Tyr Arg Ala Pro Glu Val Ile Leu Asn
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ctg gac cag ctg aag gag atc atg aag gtg acg ggg acg cct ccg gct 774
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 Ala Ser Pro Leu Ala Val Asn Leu Leu Glu Lys Met Leu Val Leu Asp
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 Ala Asp Ile Arg Leu Thr Ala Gly Glu Phe Leu Ser His Pro Tyr Phe
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gag tcc ctg cac gac acg gaa gat gag ccc cag gtc cag aag tat gat 1014

Glu Ser Leu His Asp Thr Glu Asp Glu Pro Gln Val Gln Lys Tyr Asp
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Asp Ser Phe Asp Tyr Phe Asp Arg Thr Leu Asp Glu Trp Lys Arg Val
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act tac aaa gag gtg ctc agc ttc aag cct ccc cgg cag ctg ggg gcc 1110
Thr Tyr Lys Glu Val Leu Ser Phe Lys Pro Pro Arg Gln Leu Gly Ala
345 350 355

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Arg Val Ser Lys Glu Thr Pro Leu
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tggctggggc ttgcatccca aggcattcat cagagcagac gcccggttc catggacct 1277

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caacaagggtg gccatcaaga agttgtaccg gcccttcag tcggagctgt ttgccaagcg 480

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Met Arg His Glu Asn Val Ile

1

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Gly Leu Leu Asp Val Phe Thr Pro Asp Glu Ser Leu Asp Asp Phe Thr

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15

20

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Met Lys His Glu Thr Leu Ser Glu Asp Arg Ile Gln Phe Leu Val Tyr	
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Gln Met Leu Lys Gly Leu Lys Tyr Ile His Ala Ala Gly Val Ile His	
60 65 70	
aga gac ttg aag cct ggc aac ctg gct gtg aat gag gac tgt gag ctg	772
Arg Asp Leu Lys Pro Gly Asn Leu Ala Val Asn Glu Asp Cys Glu Leu	
75 80 85	
aag atc cta gac ttt ggc ctt gcc agg cag gca gac agt gag atg aca	820
Lys Ile Leu Asp Phe Gly Leu Ala Arg Gln Ala Asp Ser Glu Met Thr	
90 95 100	
gga tat gtg gta acc cgg tgg tat cgg gca cca gag gtc atc ttg aat	868
Gly Tyr Val Val Thr Arg Trp Tyr Arg Ala Pro Glu Val Ile Leu Asn	
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Trp Met Arg Tyr Thr Gln Thr Val Asp Ile Trp Ser Val Gly Cys Ile	
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Met Ala Glu Met Ile Thr Gly Lys Ile Leu Phe Lys Gly Asn Asp His	
140 145 150	
ctg gac cag ctg aag gag atc atg aag atc aca ggg acg ccc cct cct	1012
Leu Asp Gln Leu Lys Glu Ile Met Lys Ile Thr Gly Thr Pro Pro Pro	
155 160 165	
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 gcccctgatc ccgggtccgg tcctggggcg cgtgctccg gctgggg atg agc tcc 176
 Met Ser Ser
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ccg cca ccc gcc cgc aag ggc ttt tac cgc cag gag gtg acc aaa acg 224
 Pro Pro Pro Ala Arg Lys Gly Phe Tyr Arg Gln Glu Val Thr Lys Thr
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gcc tgg gag gtg cgc gcc gtg tac caa gac ctg cag ccc gtt ggc tct 272
 Ala Trp Glu Val Arg Ala Val Tyr Gln Asp Leu Gln Pro Val Gly Ser
 20 25 30 35

ggg gcc tat ggt gca gtg tgc tct gca gta gac agc cgc act ggc aac 320

ggc ctc cct gag tta gaa aag aag gat ttt gcc tct gtc ctg acc aac 1108
 Gly Leu Pro Glu Leu Glu Lys Lys Asp Phe Ala Ser Val Leu Thr Asn
 185 190 195

gca agc cct cag gct gtg aat ctc ctg gaa agg atg ctg gtg ctg gat 1156
 Ala Ser Pro Gln Ala Val Asn Leu Leu Glu Arg Met Leu Val Leu Asp
 200 205 210 215

gcg gaa cag cgg gtg aca gca gct gag gcg tta acc cat cca tac ttt 1204
 Ala Glu Gln Arg Val Thr Ala Ala Glu Ala Leu Thr His Pro Tyr Phe
 220 225 230

gag tcc ctt cgg gac act gag gat gaa ccc aag gcc cag aaa tat gac 1252
 Glu Ser Leu Arg Asp Thr Glu Asp Glu Pro Lys Ala Gln Lys Tyr Asp
 235 240 245

gac tcc ttt gat gat gta gac cgc acc ctt gag gaa tgg aag cgt gtg 1300
 Asp Ser Phe Asp Asp Val Asp Arg Thr Leu Glu Glu Trp Lys Arg Val
 250 255 260

act tac aag gaa gtt ctc agc ttc aag cct cct agg cag cta gga gcc 1348
 Thr Tyr Lys Glu Val Leu Ser Phe Lys Pro Pro Arg Gln Leu Gly Ala
 265 270 275

aga gtt cca aag gag acg gct ctg tga cgacctctgg gtgggttggg 1395
 Arg Val Pro Lys Glu Thr Ala Leu
 280 285

gggatatccaa gggagggttg ctcggagctt cacggcacct tggcttcct tctctggaaa 1455

aggaatcctg gttaacaccc cgacagtgcc tggagcttgt atcccaagtc ttccacctgg 1515

acatgctgtg tagacccttg aatcatgaac cctccatctc caaacctgtt ctteggcttt 1575

cgagtgcgcc agatgaccct ggaagaacat ctaagctttc tgtccaagac ccctacccaa 1635

catgggacta gcctttgaat tctggagttg tacatgaaat cagtattcgt gaaaaagctt 1695

Gly Ala Tyr Gly Ala Val Cys Ser Ala Val Asp Ser Arg Thr Gly Asn

40

45

50

aag gtg gcc atc aag aag ttg tac cgg ccc ttc cag tcg gag ctg ttt 368

Lys Val Ala Ile Lys Lys Leu Tyr Arg Pro Phe Gln Ser Glu Leu Phe

55

60

65

gcc aag cgc gcc tac aga gag ttg cgc ctc ctc aaa cac atg cgc cac 416

Ala Lys Arg Ala Tyr Arg Glu Leu Arg Leu Leu Lys His Met Arg His

70

75

80

gag aac gtc att ggg cta ctg gat gtg ttc aca cct gat gag tct ctg 464

Glu Asn Val Ile Gly Leu Leu Asp Val Phe Thr Pro Asp Glu Ser Leu

85

90

95

gac gac ttc aca gac ttc tac ctg gtg atg cca ttc atg ggc act gat 512

Asp Asp Phe Thr Asp Phe Tyr Leu Val Met Pro Phe Met Gly Thr Asp

100

105

110

115

ctg ggc aaa ctc atg aag cat gag acc ctg agt gaa gac aga atc cag 560

Leu Gly Lys Leu Met Lys His Glu Thr Leu Ser Glu Asp Arg Ile Gln

120

125

130

ttt ctt gtg tat cag atg ttg aag ggg ctg aag tat atc cat gcg gct 608

Phe Leu Val Tyr Gln Met Leu Lys Gly Leu Lys Tyr Ile His Ala Ala

135

140

145

ggg gtc atc cac aga gac ttg aag cct ggc aac ctg gct gtg aat gag 656

Gly Val Ile His Arg Asp Leu Lys Pro Gly Asn Leu Ala Val Asn Glu

150

155

160

gac tgt gag ctg aag atc cta gac ttt ggc ctt gcc agg cag gca gac 704

Asp Cys Glu Leu Lys Ile Leu Asp Phe Gly Leu Ala Arg Gln Ala Asp

165

170

175

agt gag atg aca gga tat gtg gta acc cgg tgg tat cgg gca cca gag 752

Ser Glu Met Thr Gly Tyr Val Val Thr Arg Trp Tyr Arg Ala Pro Glu

180

185

190

195

gtc atc ttg aat tgg atg cgc tac acg cag aca gtg gac att tgg tcc	800
Val Ile Leu Asn Trp Met Arg Tyr Thr Gln Thr Val Asp Ile Trp Ser	
200 205 210	
ggt ggc tgc atc atg gcg gag atg att act ggg aag atc ctg ttc aaa	848
Val Gly Cys Ile Met Ala Glu Met Ile Thr Gly Lys Ile Leu Phe Lys	
215 220 225	
ggc aat gac cac ctg gac cag ctg aag gag atc atg aag atc aca ggg	896
Gly Asn Asp His Leu Asp Gln Leu Lys Glu Ile Met Lys Ile Thr Gly	
230 235 240	
acg ccc cct cct gag ttt gtt cag aag cta cag agt gca gag gcc aag	944
Thr Pro Pro Pro Glu Phe Val Gln Lys Leu Gln Ser Ala Glu Ala Lys	
245 250 255	
aac tac atg gaa ggc ctc cct gag tta gaa aag aag gat ttt gcc tct	992
Asn Tyr Met Glu Gly Leu Pro Glu Leu Glu Lys Lys Asp Phe Ala Ser	
260 265 270 275	
gtc ctg acc aac gca agc cct cag gct gtg aat ctc ctg gaa agg atg	1040
Val Leu Thr Asn Ala Ser Pro Gln Ala Val Asn Leu Leu Glu Arg Met	
280 285 290	
ctg gtg ctg gat gcg gaa cag cgg gtg aca gca gct gag gcg tta acc	1088
Leu Val Leu Asp Ala Glu Gln Arg Val Thr Ala Ala Glu Ala Leu Thr	
295 300 305	
cat cca tac ttt gag tcc ctt cgg gac act gag gat gaa ccc aag gcc	1136
His Pro Tyr Phe Glu Ser Leu Arg Asp Thr Glu Asp Glu Pro Lys Ala	
310 315 320	
cag aaa tat gac gac tcc ttt gat gat gta gac cgc acc ctt gag gaa	1184
Gln Lys Tyr Asp Asp Ser Phe Asp Asp Val Asp Arg Thr Leu Glu Glu	
325 330 335	
tgg aag cgt gtg act tac aag gaa gtt ctc agc ttc aag cct cct agg	1232

Trp Lys Arg Val Thr Tyr Lys Glu Val Leu Ser Phe Lys Pro Pro Arg
 340 345 350 355

cag cta gga gcc aga gtt cca aag gag acg gct ctg tga cgacctctgg 1281
 Gln Leu Gly Ala Arg Val Pro Lys Glu Thr Ala Leu
 360 365

gtgggtttggg gggatatccaa aggaggttgg ctggagctt cacggcacct tggcttccct 1341
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 ttccacctgg acatgctgtg tagacccttg aatcatgaac cctccatctc caaacctgtt 1461
 cttcggcttt cgagtgtccc agatgaccct ggaagaacat ctaagctttc tgtccaagac 1521
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<210> 74

<211> 768

<212> DNA

<213> M. musculus

<220>

<400> 74

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 agagcccgca aaggaaaatc tcagaggcgg gcaggcgggt agccggcgcg gagtacgccc 120
 tgccacgcag tgaccggggg cgcgcggggc gagcccctga tcccgggtcc ggtcctgggg 180
 cgcggtgctc cggctgggga tgagctcccc gccaccgcc cgcaagggt tttaccgcca 240
 ggaggtgacc aaaacggcct gggaggtgcg cgccgtgtac caagacctgc agcccgttgg 300
 ctctggtgcc tatggtgcag tgtgctctgc agtagacagc cgcactggca acaagggtggc 360

catcaagaag ttgtaccggc ccttcacgac ggagctgttt gccaaagcgcg cctacagaga 420
gttgcgccctc ctcaaacaca tgcgccacga gaacgtcatt gggctactgg atgtgttcac 480
acctgatgag tctctggacg acttcacaga cttctacctg gtgatgccat tcatgggcac 540
tgatctgggc aaactcatga agcatgagac cctgagtga gacagaatcc agtttcttgt 600
gtatcagatg ttgaaggggc tgaagtatat ccatgcggct ggtgtcatcc acagaatcct 660
agactttggc cttgccaggc aggcagacag tgagatgaca ggatatgtgg taaccocggtg 720
gtatcgggca cagaggtcat cttgaattgg gatgcgctac acgcagac 768

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<211> 866

<212> DNA

<213> M. musculus

<220>

<221> unsure

<222> 727

<223> unknown

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<400> 75

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tgatcccggtg tccggtcctg gggcgcggtg ctccggctgg ggatgagctc cccgccaccc 180
gcccgcgaagg gctttttaccg ccaggagggtg accaaaacgg cctgggaggt gcgcgcogtg 240
taccaagacc tgcagcccggt tggctctgggt gcctatggtg cagtgtgctc tgcagtagac 300

agccgcactg gcaacaaggt ggccatcaag aagttgtacc ggcccttcca gtcggagctg 360
tttgccaagc gcgcctacag agagttgcgc ctccctcaaac acatgcgcca cgagaacgtc 420
attgggctac tggatgtgtt cacacctgat gagtctctgg acgacttcac agactttgga 480
catttggtcc gttggctgca tcatggcgga gatgattact gggaagatcc tgttcaaagg 540
caatgaccac ctggaccagc tgaaggagat catgaagatc acagggacgc cccctcctga 600
gtttgttcag aagctacaga gtgcagaggc caagaactac atggaaggcc tccctgagtt 660
agaaaagaag gattttgcct ctgtcctgac ccaacgcagc ccctcaggct gtgaaatctc 720
ctggaanagg atgcctgggtg ctcgatgcg gaaacagcgg ggtgaccagc agctgaaggc 780
gttaaccctt cccatacctt tggagttccc cttegggaaa cactggaggg attgaaacct 840
caggggcccc cgaaaatatt gacgaa 866

<210> 76

<211> 1445

<212> DNA

<213> M. musculus

<220>

<220>

<221> CDS

<222> (643)... (876)

<400> 76

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cactgatggg acttctcagt ggacatttgg tccgttggct gcatcatggc ggagatgatt 180
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 ttcggccaag atgtgggtgc tgggtgggcc cccctctgtc cctgcattgt attcctgacc 300
 ttggtacaga cctggaccag ctgaaggaga tcatgaagat cacagggacg cccctcctg 360
 agtttgttca gaagctacag agtgcagagg tcagtgggag tgggtggtgg gctggacttg 420
 ggcttggggg ctggcctatc accctttttt ccctcacagg ccaagaacta catggaaggc 480
 ctccctgagt tagaaaagaa ggattttgcc tctgtcctga ccaacgcaag ccctcagggt 540
 accgctggat ggggtgaagg tctcagggtg ctgggtgagt atgtcccctc ctgtggcttg 600
 gcctgaattg ctcttccac agctgtgaat ctctggaaa gg atg ctg gtg ctg 654

Met Leu Val Leu

1

gat gcg gaa cag cgg gtg aca gca gct gag gcg tta acc cat cca tac 702
 Asp Ala Glu Gln Arg Val Thr Ala Ala Glu Ala Leu Thr His Pro Tyr
 5 10 15 20

ttt gag tcc ctt cgg gac act gag gat gaa ccc aag gcc cag aaa tat 750
 Phe Glu Ser Leu Arg Asp Thr Glu Asp Glu Pro Lys Ala Gln Lys Tyr
 25 30 35

gac gac tcc ttt gat gat gta gac cgc acc ctt gag gaa tgg aag cgt 798
 Asp Asp Ser Phe Asp Asp Val Asp Arg Thr Leu Glu Glu Trp Lys Arg
 40 45 50

gtg act tac aag gaa gtt ctc agc ttc aag cct cct agg cag cta gga 846
 Val Thr Tyr Lys Glu Val Leu Ser Phe Lys Pro Pro Arg Gln Leu Gly
 55 60 65

gcc aga gtt cca aag gag acg gct ctg tga cgacctctgg gtgggttggg 896
 Ala Arg Val Pro Lys Glu Thr Ala Leu

70

75

gggtatccaa aggaggttgg ctggagctt cacggcacct tggcttccct tctctggaaa 956
aggaatcctg gttaacaccc cgacagtgcc tggagcttgt atcccaagtc ttccacctgg 1016
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cagagtgagc agagcttagg agacaagtgc cagacctgag ctctgctcgc tctggacaat 1256
gccaaggcca actcctgaga cggaatgaga cagaggtttt ggggacactg actcagggac 1316
atcatctctt ctggaagtgg gtggattctc ttacaccctt agcctggaat tcgaaccagc 1376
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aaaaaaaaa 1445

<210> 77

<211> 581

<212> DNA

<213> M. musculus

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<400> 77

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caagtcttcc acctggacat gctgtgtaga cccttgaatc atgaaccctc catctccaaa 180
cctgttcttc ggctttcgag tgcccagat gaccctggaa gaacatctaa gctttctgtc 240

caagaccct acccaacatg ggactagcct ttgaattctg gagttgtaca tgaaatcagt 300
attcgtgaaa aagcttcaga gtgagcagag cttaggagac aagtgccaga cctgagctct 360
gctcgctctg gacaatgcc aaggccaactc ctgagacgga atgagacaga ggttagggga 420
cactgactca gggacatcat ctcttctgga agtgggtgga ttctcttaca cccttagcct 480
ggaattcgaa ccagccattg gtgtagccta agtggctggg ggctaataaa acctacagta 540
gatctccaat aaatatcaaa aatataattt acaaactaat c 581

<210> 78

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 78

tctctggaaa aggaatcctg gtta

24

<210> 79

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 79

ccaggtggaa gacttgggat ac

22

<210> 80

<211> 21

<212> DNA

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<220>

<223> PCR Probe

<400> 80

cacccccgaca gtgcctggag c

21

<210> 81

<211> 20

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<220>

<223> PCR Primer

<400> 81

ggcaaattca acggcacagt

20

<210> 82

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<223> PCR Primer

<400> 82

gggtctcgct cctggaagat

20

<210> 83

<211> 27

<212> DNA

<213> Artificial Sequence

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<223> PCR Probe

<400> 83

aaggccgaga atgggaagct tgtcatc

27

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<223> Antisense Oligonucleotide

<400> 84

tcatctcact gtctgcctgc

20

<210> 85

<211> 20

<212> DNA

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<223> Antisense Oligonucleotide

<400> 85

ccgggtcact gcgtggcagg

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<210> 86

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 86

gggagctcat cccagccgg

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<210> 87

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 87

gtaaaagccc ttgcgggcgg

20

<210> 88

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 88

tggcggtaaa agcccttgcg

20

<210> 89

<211> 20

<212> DNA

<213> Artificial Sequence

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<400> 89

acctcctggc ggtaaaagcc

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<210> 90

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Antisense Oligonucleotide

<400> 90

tggtcacctc ctggcggtaa

20

<210> 91

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 91

aggccgtttt ggtcacctcc.

20

<210> 92

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Antisense Oligonucleotide

<400> 92

cgcacctccc aggccgtttt

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<210> 93

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 93

gagccaacgg gctgcaggtc

20

<210> 94

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 94

caccagagcc aacgggctgc

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<210> 95

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Antisense Oligonucleotide

<400> 95

gcaccatagg caccagagcc

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<210> 96

<211> 20

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<223> Antisense Oligonucleotide

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acactgcacc ataggcacca

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<210> 97

<211> 20

<212> DNA

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tgagagcac actgcacat

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<210> 98

<211> 20

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<211> 20

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<210> 100

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 100

ttgccagtgc ggctgtctac

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<210> 101

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Antisense Oligonucleotide

<400> 101

ccttggtgcc agtgcggtg

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<210> 102

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 102

ggccaccttg ttgccagtgc

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<210> 103

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 103

actctctgta ggcgcgcttg

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<210> 104

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Antisense Oligonucleotide

<400> 104

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20

<210> 105

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 105

gaggaggcgc aactctctgt

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<210> 106

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 106

tgtgtttgag gaggcgcaac

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<210> 107

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Antisense Oligonucleotide

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<210> 108

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 108

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<210> 109

<211> 20

<212> DNA

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<223> Antisense Oligonucleotide

<400> 109

tcaccaggta gaagtctgtg

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<210> 110

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 110

gccccatgaat ggcacacca

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<210> 111

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 111

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<210> 112

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Antisense Oligonucleotide

<400> 112

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<210> 113

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Antisense Oligonucleotide

<400> 113

gaaactggat tctgtcttca

20

<210> 114

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 114

cacaagaaac tggattctgt

20

<210> 115

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 115

tgatacacaa gaaactggat

20

<210> 116

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 116

gcctgcctgg caaggccaaa

20

<210> 117

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 117

tcactgtctg cctgcctggc

20

<210> 118

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 118

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20

<210> 119

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 119

tgcccgatac caccgggtta

20

<210> 120

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 120

tcaagatgac ctctggtgcc

20

<210> 121

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 121

cgcatccaat tcaagatgac

20

<210> 122

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 122

ttgcctttga acaggatctt

20

<210> 123

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 123

ggtcattgcc tttgaacagg

20

<210> 124

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 124

ccttcagctg gtccaggtgg

20

<210> 125

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 125

tgatctcctt cagctggtcc

20

<210> 126

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 126

cttcatgatc tccttcagct

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<210> 127

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 127

tccatgtagt tcttggcctc

20

<210> 128

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 128

ggccttccat gtagttcttg

20

<210> 129

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 129

agggaggcct tccatgtagt

20

<210> 130

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Oligonucleotide

<400> 130

aactcaggga ggccttccat

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<210> 131

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Antisense Oligonucleotide

<400> 131

gtcaccgcgt gttccgcac

20

<210> 132

<211> 20

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<400> 132

ctcagctgct gtcacccgct

20

<210> 133

<211> 20

<212> DNA

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